

### **REMARKS**

Claims 1-14 and 19-20 are presented for examination. In view of the remarks that follow, Applicants respectfully request reconsideration.

#### **Allowable Subject Matter**

Noted with appreciation is the indication in the Office Action that dependent Claim 14 recites allowable subject matter, and would be allowed if rewritten in independent form. Claim 14 depends indirectly from independent Claim 1, and Claim 1 is believed to be allowable for reasons discussed below. Accordingly, it is believed to be unnecessary to separately place Claim 14 in independent form at this time.

#### **Preliminary Comment Regarding Office Action**

In the present Office Action, pages 10-12 set forth a "Response to Arguments" section, in which the Examiner offers comments in reply to arguments presented in Applicants' most recent prior Response. However, some of the Examiner's comments are completely without basis.

For example, the Examiner continues to present claim rejections that are based on a combination of Lee U.S. Patent No. 5,905,289 and Tomita U.S. Patent Application Publication No. 2005/0035457. In the remarks of a prior Response filed on October 6, 2006, Applicants pointed out that these two references are non-analogous prior art, because they are not within Applicants' field of endeavor. In reply, in a prior Office Action mailed on April 5, 2007, the Examiner insisted that both of these references are from Applicants' field of endeavor, asserting on page 14 that Lee and Tomita "are both from the same field of endeavor (semiconductors)". In their most recent prior Response (filed on June 29, 2007), Applicants directed the attention of the Examiner to the case of *Wang Laboratories, Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed.Cir. 1993). In *Wang*, the Federal Circuit Court of Appeals held that, in essence, semiconductor SIMMs of one type are NOT in the same field of endeavor as semiconductor SIMMs of a different type. In effect, the Federal Circuit held that semiconductors is not a field

of endeavor. But in the present Office Action, the Examiner completely ignores the *Wang* case, and continues to assert that "semiconductors" is a field of endeavor. Examination of the present application is not advanced where the Examiner simply ignores controlling case law that runs contrary to the Examiner's position. Applicants respectfully submit that there is no reasonable basis for the Examiner to continue to insist that "semiconductors" are a field of endeavor, when the Federal Circuit has clearly rejected that particular proposition.

A different example also relates to Applicants' prior argument that Lee and Tomita are non-analogous art. In the paragraph bridging pages 10-11 of the present Office Action, the Examiner responds to part of Applicants' prior argument on this point, by asserting that Tomita does in fact disclose certain structure being claimed by Applicants. However, the Examiner has completely missed the point. If Tomita is non-analogous art, then it does not matter whether or not Tomita discloses any of the claim limitations, because non-analogous art cannot be used to reject claims, even if it has relevant teachings. Stated differently, the Examiner's reply is completely non-responsive to Applicants' argument. Examination of the present application is not advanced where the Examiner simply ignores defects in the applied art, and continues to reject claims using art that does not meet the minimum qualifications for use in rejecting claims. Applicants respectfully submit there is no reasonable basis for the Examiner to continue to reject claims using references that are clearly not analogous art.

Yet another example involves Applicants' prior argument that Lee and Tomita are non-analogous art. In reply to this argument, the most recent prior Office Action cites the Board of Appeals decision of *Ex parte Obiaya*, 227 USPQ 58, 60 (Bb.Pat.App & Inter. 1985). Applicants' most recent prior Response then pointed out in reply that the *Obiaya* decision has absolutely no relevance to the issue of whether references are analogous art. In the present Office Action, the Examiner replies by stating on page 11 that "Obiaya was not utilized for [the issue of whether Lee and Tomita constitute] analogous art. Obiaya was utilized to disclose a different reason for combining". However, the Examiner completely misses the point. If Lee and Tomita are non-analogous art, then it does not matter whether or not there is a reason for combining them.

Stated differently, the Examiner's reply is completely non-responsive to Applicants' argument. Examination of the present application is not advanced where the Examiner cites case law that is not relevant, and continues to reject claims using art that does not meet the minimum qualifications for use in rejecting claims. Applicants respectfully submit there is no reasonable basis for the Examiner to continue to reject claims using references that are clearly not analogous art.

Still another example relates to the reason offered by the Examiner as to why a person skilled in the art would be motivated to combine Lee and Tomita. In the most recent prior Office Action, the Examiner asserted that the reason a skilled person would be motivated to combine Lee and Tomita is for "protecting against external noise". But in their most recent prior Response, Applicants pointed out that the structure disclosed by Lee and Tomita is such that, even if teachings from Lee and Tomita are combined in the proposed manner, the resulting combination would not provide protection from external noise. In the present Office Action, the Examiner completely ignores this argument, and again insists that the reason for combining Lee and Tomita is "protecting against external noise". Examination of the present application is not advanced where the Examiner simply ignores relevant arguments, as well as significant inconsistencies between the claim rejection and the applied art. Applicants respectfully submit that there is no reasonable basis for the Examiner to continue to insist that a skilled person would be motivated to combine Lee and Tomita in order to achieve "protecting against external noise", when it is very clear that the proposed combination would not actually be capable of "protecting against external noise".

Yet another example relates to the argument in Applicants' most recent prior Response that the §103 rejection is not proper because the Examiner is using hindsight of Applicants' disclosure. It is important to note that Applicants' complaint is not merely that the Examiner used some hindsight. Instead, Applicants' complaint is that what the Examiner viewed with hindsight was Applicants' disclosure. In reply, the Examiner cites the court case of *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). However, the *McLaughlin* case is

not responsive to Applicants' argument. In particular, the *McLaughlin* case says that the Examiner may not use hindsight of Applicants' disclosure, which is exactly the point Applicants are making. *McLaughlin* does not establish that, under the specific facts of the present application, the hindsight used by the Examiner was hindsight of something other than Applicants' disclosure. Examination of the present application is not advanced where the Examiner cites case law that is not relevant, offers no meaningful reply to Applicants' argument on hindsight, and continues to maintain a rejection that is rather clearly based on improper use of hindsight of Applicants' disclosure. Applicants respectfully submit that there is no reasonable basis for the Examiner to continue to insist that the *McLaughlin* case authorizes her to use hindsight of Applicants' disclosure.

The foregoing points are merely selected examples of the problems in the present Office Action, rather than an exhaustive list of all problems. But they do demonstrate how the Examiner is maintaining positions that are completely without basis.

#### Independent Claim 1 - 35 U.S.C. §103

Turning now in more detail to specific claims, independent Claim 1 stands rejected under 35 U.S.C. §103 on the ground that it would be obvious in view of a proposed combination of teachings from Lee U.S. Patent No. 5,905,289 and Tomita U.S. Patent Application Publication No. 2005/0035457. This ground of rejection is respectfully traversed. The PTO specifies in MPEP §2142 that:

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

Applicants respectfully submit that Lee and Tomita fail to establish a prima facie case of obviousness under §103 with respect to Claim 1, for mutually exclusive reasons that are discussed below.

#### NONANALOGOUS ART CANNOT BE USED TO ESTABLISH OBVIOUSNESS

Only analogous prior art can be considered for the purpose of trying to establish a prima facie case of obviousness under 35 U.S.C. §103. In this regard, MPEP §2141.01(a) specifies that, for a reference to be "analogous" prior art that can be considered under §103, it must be either (1) in the field of Applicants' endeavor or (2) reasonably pertinent to the particular problem with which the inventor was concerned. The provisions of §2141.01(a) go on to explain that, although the PTO classification system carries a small amount of weight in determining what is relevant, similarities and differences in structure and function carry far greater weight. In this regard, §2141.01(a) discusses a specific example, and states that:

The court also found the reference was not reasonably pertinent to the problem with which the inventor was concerned because a person having ordinary skill in the art would not reasonably have expected to solve the problem of dead volume in tanks for refined petroleum by considering a reference dealing with plugging underground formation anomalies.

In the present situation, and as evident from the title of the invention, the particular problem with which the Applicants were concerned, and the field of Applicants' endeavor, is heat dissipation within an integrated circuit. The Office Action admits on page 2 that Lee "fails to disclose . . . dummy structures from different metallurgy layers are thermally connected".

The Office Action then turns to Tomita. However, as explained by Tomita in paragraph [0008], Tomita's focus is (1) inhibiting the occurrence of resist poisoning and

(2) providing protection against external electromagnetic noise. Words such as "heat" and "thermal" do not appear anywhere within Tomita, much less in association with dummy structures. Consequently, Tomita is no more relevant than Lee, and adds nothing to the teachings of Lee.

In reply, the Examiner cites the Board of Appeals decision of *Ex parte Obiaya*, 227 USPQ 58, 60 (Bb.Pat.App & Inter. 1985). However, as Applicants pointed out in their last Response, the *Obiaya* decision has absolutely no relevance to the present situation. The *Obiaya* decision involved a situation where an applicant argued that his invention was not obvious in view of the prior art because his invention had an advantage, but the Board held that the same advantage was actually inherently present in the prior art. Here, Applicants are not talking about any advantage of their invention, but instead are addressing the entirely different issue of whether or not a particular reference constitutes analogous prior art for purposes of §103. The *Obiaya* decision had absolutely nothing to do with the issue of whether or not a particular reference constitutes analogous prior art. In reply, the Examiner asserts on page 11 of the Office Action that "Obiaya was not utilized for [the issue of whether Lee and Tomita constitute] analogous art. Obiaya was utilized to disclose a different reason for combining". However, the Examiner misses the point. Even if there is a reason for combining Lee and Tomita, they cannot be used to reject claims if they are not analogous art.

In the Office Action, the Examiner further asserts that "semiconductors" is a field of endeavor, and that everything relating to semiconductors is within this field, including Lee, Tomita and the present disclosure. However, the courts do not agree with the Examiner. For example, MPEP §2141.01(a)(V) cites the Federal Circuit decision of *Wang Laboratories, Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed.Cir. 1993). In *Wang*, the court held that single in-line memory modules (SIMMs) for installation in personal computers are in a different field of endeavor from SIMMs for industrial controllers. Contrary to the assertions in the Office Action, "semiconductors" is not a field of endeavor, because *Wang* held that semiconductor

SIMMs of one type are not in the same field of endeavor as semiconductor SIMMs of a different type.

As mentioned above, the particular problem with which the Applicants were concerned, and thus the field of Applicants' endeavor, is heat dissipation within an integrated circuit. Neither Lee nor Tomita has any teachings about heat dissipation. Accordingly, neither Lee nor Tomita is within Applicants' field of endeavor, and neither is reasonably pertinent to the particular problem with which the inventors were concerned. In the words of the MPEP, neither Lee nor Tomita is "reasonably pertinent to the problem with which the inventor was concerned because a person having ordinary skill in the art would not reasonably have expected to solve the problem of" heat dissipation within an integrated circuit "by considering a reference dealing with" maintaining surface planarity of a metallurgy layer (lines 34-38 in column 2 of Lee), or inhibiting resist poisoning and providing protection against external noise (paragraph [0008] of Tomita). Accordingly, it is respectfully submitted that neither Lee nor Tomita is what the PTO considers to be "analogous" prior art. Thus, neither can properly be used in an attempt to establish a prima facie case of obviousness under §103. As a result, the Examiner's burden of factually supporting a prima facie case of obviousness has clearly not been met, and the rejection under §103 should be withdrawn. For this reason alone, it is respectfully submitted that the pending §103 rejection must be withdrawn, and notice to that effect is respectfully requested.

#### NO VALID REASON IS GIVEN FOR MODIFYING LEE IN VIEW OF TOMITA

In the Office Action, the Examiner asserts that, in view of Tomita, it would be obvious to modify Lee by thermally connecting dummy structures in different metallurgy layers. Applicants respectfully disagree, for the following reasons. It is well-established that, in formulating a rejection under §103 by combining prior art elements, it is necessary to identify the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed. On pages 2-3 of the Office Action, the Examiner asserts that a reason a person of ordinary skill would have been prompted to modify Lee in view of Tomita would be for

"protecting against external noise". Applicants disagree. First, the modification suggested by the Examiner is to thermally connect dummy structures to obtain a thermal result, but the reason suggested by the Examiner has to do with electrically connecting dummy structures to obtain an electromagnetic shielding effect. Second, in Tomita, the dummy structures are located around the periphery of other circuitry, and the dummy structures are thus in a position where external noise reaches the dummy structures before it reaches the other circuitry. In contrast, the Examiner is relying on the embodiment shown in Figure 12 of Lee, where the dummy structures 44 are located in the interior of the semiconductor structure, between other circuitry such as the conductive lines 20 and the conductive lines 22. A person skilled in the art would readily recognize that connecting dummy structures 44 in Figure 12 of Lee would never provide the asserted benefit of "protecting against external noise", because external noise would reach the conductive lines 20 and 22 before it reached the dummy structures 44.

Consequently, the idea to modify Lee in view of Tomita is not coming from what was known before the present invention, but instead is necessarily coming from hindsight of Applicant's disclosure. In particular, using Applicant's disclosure as a blueprint, the Examiner has selectively extracted isolated structural features from both Lee and Tomita, and has then combined these isolated features with a 20/20 hindsight view of the desired result. The proper inquiry is whether, if Applicant's disclosure is completely ignored, there is any reason that would prompt a person of ordinary skill to make the proposed modification of Lee in view of Tomita. The Examiner has not identified any valid reason that would prompt such a modification. The rejection is clearly based on hindsight.

As to hindsight, the Examiner does not deny that she is using hindsight of Applicants' disclosure. Instead, on page 12 of the Office Action, the Examiner asserts that her use of hindsight of Applicants' disclosure is perfectly acceptable, citing the court case of *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). However, the *McLaughlin* case actually says just the opposite of what the Examiner asserts it does. In particular, the *McLaughlin* case says that examiners may not use hindsight of Applicants' disclosure

It is well-established that, if a §103 rejection does not identify any valid reason that would prompt the proposed modification, then the rejection fails to meet one of the minimum requirements needed to properly establish a prima facie case of obviousness. In the present situation, for each of the various different reasons discussed above, it is respectfully submitted that there is no valid reason that would prompt a person of ordinary skill in the art to make the proposed modification to Lee in view of Tomita. Accordingly, the proposed modification of Lee in view of Tomita would not be obvious under §103.

In view of each of the various different reasons discussed above, it is respectfully submitted that Claim 1 is not rendered obvious under §103 by Lee and Tomita. Claim 1 is therefore believed to be allowable, and notice to that effect is respectfully requested.

#### Independent Claim 19

Independent Claim 19 stands rejected under 35 U.S.C. §103 on the ground that it would be obvious in view of a proposed combination of teachings from Lee, Tomita, and Iguchi U.S. Patent No. 6,225,697. This ground of rejection is respectfully traversed. As noted earlier, the PTO specifies in MPEP §2142 that:

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

Applicants respectfully submit that Lee, Tomita and Iguchi fail to establish a prima facie case of obviousness under §103 with respect to Claim 19. In this regard, the Office Action relies on Iguchi for a teaching of a particular 0.1µm dimension. Aside from this, the Office Action combines Lee and Tomita in essentially the same manner that they were combined in order to reject Claim 1. Accordingly, for the same basic reasons set forth above in association with

Claim 1, it is respectfully submitted (1) that Lee and Tomita are non-analogous art with respect to the present invention, and (2) that there is no valid reason that would prompt a person of ordinary skill in the art to make the proposed modification to Lee in view of Tomita. It is therefore respectfully submitted that Claim 19 is not rendered obvious under §103 by Lee and Tomita, even when considered with Iguchi. Claim 19 is thus believed to be allowable, and notice to that effect is respectfully requested.

#### Dependent Claims

Claims 2-13 and Claim 20 respectively depend from Claim 1 and Claim 19, and are also believed to be distinct from the art of record, for example for the same reasons discussed above with respect to Claims 1 and 19.

#### Conclusion

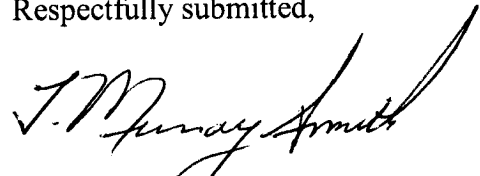
Based on the foregoing, it is respectfully submitted that all of the pending claims are fully allowable, and favorable reconsideration of this application is therefore respectfully requested. If the Examiner believes that examination of the present application may be advanced in any way by a telephone conference, the Examiner is invited to telephone the undersigned attorney at 972-739-8647.

Appl. No. 10/801,475  
Reply to Office Action of September 14, 2007

Attorney Docket No. 2003-1410 / 24061.193  
Customer No. 42717

Although Applicants believe that no additional fees are due, the Commissioner is hereby authorized to charge any fee required by this paper, or to credit any overpayment, to Deposit Account No. 08-1394 of Haynes and Boone, LLP.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "T. Murray Smith", with a long, sweeping flourish extending from the end of the name.

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Enclosures: None

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